June 19, 1928. 1,674,211

J. F. LOUCKS

CLAMPING DEVICE

Filed Feb. 13, 1925

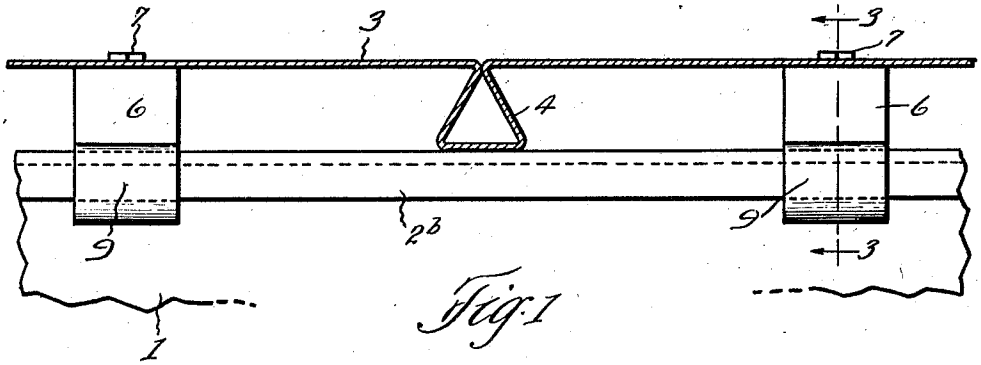


Fig. 1

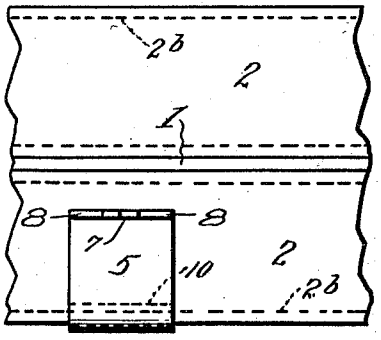


Fig. 2

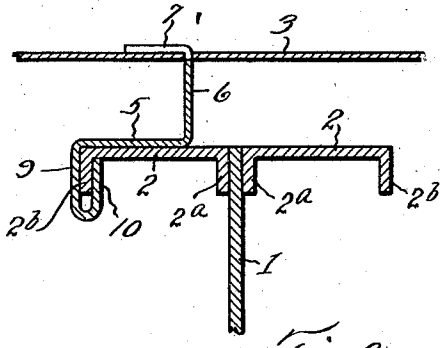


Fig. 3

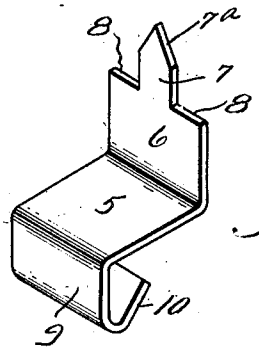


Fig. 4

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UNITED STATES PATENT OFFICE.

JAMES F. LOUCKS, OF CLEVELAND, OHIO, ASSIGNOR TO HOLORIB, INC., OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

CLAMPING DEVICE.

Application filed February 13, 1925. Serial No. 8,393.

This invention relates to clamping devices and, while capable of use in other relations, is peculiarly adapted for the purpose of securing to metal beams sheet-metal structural units of the general type shown in application No. 686,493 filed jointly by myself and Harry Gillett on January 16, 1924. The general object of the invention is to provide a simple, economical, and efficient means for securing or clamping such sheet-metal constructions to structural beams. Further and more limited objects of the invention will appear hereinafter and will be accomplished and realized in and through the construction and arrangement of parts shown in the drawings, wherein Fig. 1 represents a sectional view through a sheet metal structure showing the same secured to a beam by means of clamps embodying my invention; Fig. 2 a plan view of the beam and one of the clamps shown in Fig. 1; Fig. 3 a detail in section corresponding to the line 3—3 of Fig. 1; and Fig. 4 a detail in perspective of one of the clamps.

Describing the various parts by reference characters, 1 denotes the web and 2 the flanges of a built-up I-beam, each side flange 2 being a channeled member each having a flange 2^a, said flanges being adapted to engage opposite sides of one edge of the web member 1, to which the said flanges are secured, as by welding, the opposite or outer flanges being indicated at 2^b. Supported on top of the I-beam is a building-construction unit, the same comprising a metal sheet 3 having hollow ribs 4 projecting downwardly therefrom, each of the said ribs being triangular in section and the tops of the ribs being substantially closed, whereby the upper surface of the sheet 3 will be substantially continuous or uninterrupted, while the bottom of the sheet will be provided with triangular ribs which are adapted to be supported on the tops of structural beams. The details of construction of the said unit and the purposes and advantages of the same are fully set forth in the aforesaid application, the clamping means shown herein being particularly designed for securing units or sheets of this general character to structural beams upon which they are supported by the hollow ribs.

Each clamp is made of sheet metal and comprises generally a base portion which is adapted to rest upon the top of one side of the beam, with a post struck from the base portion and projecting upwardly from one end thereof, the said post being provided with a tongue for securing the same to the said sheet or unit, the opposite end of the base member being formed into a hook which is adapted to be applied to one of the edge flanges 2^b of the structural member.

5 denotes the base of one of my clamping members, the said base being adapted to rest on top of one side of the flange of the beam. Projecting upwardly from one end of the base 5 is the post 6, having a central tongue 7 provided with a point 7^a, there being a shoulder 8 at the bottom of the tongue 7 and at each side thereof.

The end of the base 5 which is opposite the post 6 is bent into a hook comprising a vertical portion 9 and an upwardly and inwardly inclined inner portion 10. The part 9 is considerably deeper than the edge flange 2^b with which it cooperates. This extra depth of the part 9 and the upward and inward slope of the part 10 enables the open hook to be slipped around and under a flange 2^b and the body of the clamp to be swung around until the base 5 rests upon the horizontal flange of the beam after which the part 10 may be driven or hammered upwardly and outwardly so as to engage the under surface of the beam flange 2 and the inner surface of the flange 2^b, the clamp secured firmly in place by such engagement and by the clamping of the depending edge flange 2^b between the parts 9 and 10.

It will be noted that, when the clamp is in place upon the beam, the bottom of the hooked part 9, 10, does not engage the bottom of the edge flange 2^b, due to the depth of the part 9.

After the clamps have been applied to the beam, the sheets 3 are then applied to the tops of the clamps. With a suitable punch, the sheets will be driven down upon the tongues 7 and into engagement with the shoulders 8, after which the tongues will be bent over and flattened down, as shown in Figs. 1 and 2.

It is preferred that the posts 6 to the shoulders 8 shall be of slightly less height than the depth of the ribs 4 whereby the sheets 3 will be drawn down slightly into engagement with the shoulders, thus giving a firmer hold of the sheet upon the beams.

For convenience of description, the sheets

3 are assumed to be applied to the tops of the structural beams, with the clamping members resting on top of the beams and interposed between the same and the lower surfaces of the said sheets; and the terms "upper" and "lower" have been employed in the description and claims to indicate the relative positions of the parts, but without any intention thereby of limiting my invention to a construction wherein the positions of the beams and of the sheets may not be other than those specifically shown and described herein.

Having thus described my invention, what I claim is:

1. A sheet-metal spacing and clamping member for securing a metal sheet to a beam, the said member comprising a body portion adapted to rest upon the upper surface of such beam, said body portion having at one end thereof an upwardly extending post, with a tongue projecting from the top of said post, and shoulders on each side of said post, there being a hook depending from the opposite end of the body portion which is adapted to be applied to a depending flange of said beam and to be brought into engagement with the opposed faces of such flange.

2. A sheet-metal spacing and clamping member for securing a metal sheet to structural beam, the said member comprising a body portion adapted to rest upon the upper surface of such beam, said body portion having an upwardly extending post, with a tongue projecting from the top of said post, there being a hook depending from the opposite end of the body portion which is adapted to be applied to a depending flange of said beam and to be driven into engagement with the inner face of such flange, the said hook being of considerably greater depth than the depth of said flange.

3. A sheet metal spacing and clamping member for securing a metal sheet to structural beam, the said member comprising a body adapted to rest upon the upper surface of such beam, said body having an upwardly extending post, with a tongue projecting from the top of said post, there being a hook depending from the opposite end of the body and comprising a depending vertical portion and a portion extending upwardly and inwardly from such vertical portion, the said portions being adapted to receive and be brought into engagement with the inner and outer faces of a lateral flange of such beam and the hook being of considerably greater depth than such flange.

In testimony whereof, I hereunto affix my signature.

JAMES F. LOUCKS.